

## **REMARKS/ARGUMENTS**

Claims 1-24 are cancelled. Claims 25-34 were previously withdrawn. Claims 35-54 are new and are currently pending. Claims 22-24, were previously elected without traverse, but are now cancelled.

### **35 U.S.C. § 112 Rejections**

In the Office Action dated January 24, 2008 (“Office Action”), Claim 22 was rejected as being indefinite for failing to particularly point out and distinctively claim the subject matter which the applicants regard as the invention. Claim 22, along with Claims 23 and 24, have been cancelled and Applicants respectfully submit that the rejection is therefore moot.

### **35 U.S.C. § 103 Rejections**

Previously pending Claims 22-24 were rejected as being unpatentable over U.S. Patent No. 274,789 to Kingzette (hereinafter “*Kingzette*”) in view of U.S. Patent No. 5,183,911 to Washüttl (hereinafter “*Washüttl*”). Applicants respectfully submit that new claims 35-54, as presently presented, are patentable over *Kingzette* in view of *Washüttl*.

To establish a *prima facie* case of obviousness, the Office has the burden to meet three basic criteria. First, the Office must show that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings. The teaching or suggestion to make the claimed combination **must be found in the prior art**, not based on applicant’s disclosure. Second, the Office must show that the teachings in the prior art have a reasonable expectation of success. Third, the Office must show that the combined prior art references teach or suggest all the claim limitations. *See* MPEP § 2142.

More recently published guidelines alter this burden only slightly. Specifically, the nonbinding, but illustrative, Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, 72 Fed. Reg. 57,526 (Oct. 10, 2007), state as follows:

The key to supporting any rejection under 35 U.S.C. 103 is the clear

articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn* stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”

*Id.* at 57, 528-29 (quoting *KSR International Co. v. Teleflex Inc.*, 550 U.S. at –, 82 USPQ2d at 1396). The new examination guidelines go on to state that to make a § 103(a) rejection such as in the present case, “Office personnel must... articulate... a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.” *Id.* at 57, 534. Moreover, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR*, 127 S.Ct. at 1741.

*Kingzette* and *Washüttl* fail to disclose claimed reaction temperature, gas flow to lipid volume relation, and emulsion of reactants.

Applicants respectfully submit that the Office Action would not meet its burden to show a *prima facie* case of obviousness in regard to newly presented claims at least because the combined prior art references fail to teach or suggest all the claim limitations. New independent Claim 35 reads as follows:

A method for obtaining ozonized lipids comprising:  
obtaining an **emulsion** comprising water and a lipid in a 1-50% relation by volume;  
passing a gas comprising ozone through said emulsion at a temperature about **between 30-50°C, and having a gas flow per-hour rate to lipid volume ratio about between 100 and 500**; and  
employing a quality control parameter including at least one of: peroxide index, acid index, aldehyde concentration, and viscosity.

Accordingly, when the claimed invention is viewed as a whole, as required by law, the Claim is directed towards a method for obtaining ozonized lipids, wherein the reaction occurs in a lipid-water emulsion at about between 30-50°C and having a gas flow rate (L/h) to lipid volume (L) ratio about between 100 and 500. This is a concept that is simply not

taught by the prior art of record.

As the Office action notes, *Kingzette* describes a method for producing antiseptics and disinfectants using essential oil, hydrocarbon containing a terpene, or cymene, by exposing the starting material to atmospheric oxygen or pure oxygen, while the starting material is in water. In one example, the reaction vessel can have 30 gallons of turpentine and 60 gallons of water and the reaction can occur at 60°C with air drawn or blown through the mixture.

*Washüttl* describes a method for producing ozonized oils from unsaturated vegetable oils by bubbling an ozone gas mixture through vegetable oil. Malonic dialdehyde and the peroxide coefficient are used as quality control parameters. In one example, 60-120 L/h of ozone-oxygen gas mixture is bubbled through 12 L of oil at 20°C.

Applicants have reviewed *Kingzette* and *Washüttl* in detail and cannot find reference to a reaction temperature about between 30-50°C and a gas flow rate (L/h) to lipid volume (L) ratio about between 100 and 500. *Kingzette* discloses a reaction temperature of 60°C and *Washüttl* discloses a reaction temperature of 20°C; however, neither reference discloses or suggests a temperature range about between 30-50°C while passing gas through oil. Although, temperatures about between 30-50°C do appear in *Kingzette* and *Washüttl*, the disclosed temperatures are related to purification or quality control detection steps, and **not to a reaction producing ozonized products**. Accordingly, *Kingzette* and *Washüttl* do not disclose a reaction temperature about between 30-50°C.

Additionally, applicants have reviewed *Kingzette* and *Washüttl* in detail and cannot find reference to a reaction having a gas flow rate (L/h) to lipid volume (L) ratio about between 100 and 500. *Kingzette* does not disclose any ratio of gas flow to lipid volume. *Washüttl* only suggests that a ratio of 1-2 L/min (60-120 L/h) in 12 L of oil. Accordingly, *Kingzette* and *Washüttl* do not disclose the limitation of a gas flow rate (L/h) to lipid volume (L) ratio about between 100 and 500.

Moreover, applicants have reviewed *Kingzette* and *Washüttl* in detail and cannot find reference to an ozonization reaction performed in an emulsion. *Washüttl* clearly describes ozonization occurring in pure oil. *Kingzette*, does disclose ozonization occurring in

a water mixture, but does not disclose that the mixture should be an emulsion. Although both *Kingzette* and *Washüttl*, discuss mixing, shaking and/or emulsifying oil and water mixtures, such references are only in relation to purification or quality control detection steps, and **not to a reaction producing ozonized products**. Accordingly, *Kingzette* and *Washüttl* do not disclose oxonization occurring in an emulsion.

Additionally, Claims 36-39 depend from Claim 35, incorporating its recitations; therefore, for at least the same reasons described above and because *Kingzette* and *Washüttl* fail to disclose claimed reaction temperature, gas flow to lipid volume relation, and emulsion of reactants, Claims 36-39 are at least patentable over *Kingzette* and *Washüttl* alone or in combination.

*Kingzette* and *Washüttl* fail to disclose use of a washing flask.

Claim 40 is directed to the use of a bubbling reactor with a washing flask comprising water, where the gas mixture being bubbled through the lipid-water emulsion includes air. Claim 41 is further directed to the method where the washing flask is positioned between the bubbling reactor and an ozonator.

Moreover, applicants have reviewed *Kingzette* and *Washüttl* in detail and cannot find any reference to the use of a washing flask or the use of washing flask in conjunction with an ozonator or bubbling reactor. Moreover, applicants cannot find reference to use of a washing flask, a washing flask containing water, or any similar system, when a mixture comprising air is bubbled through a lipid-water emulsion. Claims 40 and 41 depend from Claim 35, incorporating its recitations; therefore, for at least the same reasons as described above, and because the cited references fail to disclose use of a washing flask, Claims 40 and 41 are at least patentable over *Kingzette* and *Washüttl* alone or in combination.

*Kingzette* and *Washüttl* fail to disclose use of acid index, aldehyde concentration, viscosity, and certain ranges of peroxide index as quality control parameters.

Claims 42-54 are directed to the use of quality control parameters, including peroxide index, acid index, aldehyde concentration, and/or viscosity. As the Office Action

notes, *Kingzette*, fails to disclose use of quality parameters. Additionally, Applicants have reviewed *Washüttl* in detail and cannot find reference to the use of acid index, aldehyde concentration, or viscosity as quality parameters. *Washüttl* does disclose determination of malonic dialdehyde concentration; however, such a determination cannot be considered to disclose use of aldehyde concentration as a quality parameter. An aldehyde is defined as a compound having a terminal carbonyl group and while malonic dialdehyde does have a pair of carbonyl groups, it would not be considered to be an aldehyde.

Moreover, regarding peroxide index specifically, *Washüttl* only discloses use of a peroxide index or coefficient of 929, which is not within the ranges of Claims 49 and 51, namely about 600-800 units and about 200-400 units respectively. Accordingly, *Kingzette* and *Washüttl* fail to disclose use of acid index, aldehyde concentration, viscosity, a peroxide index range of about 600-800 units and a peroxide index range of 200-400 as quality control parameters, and therefore Claims 42-54 are at least patentable over *Kingzette* and *Washüttl*. Additionally, Claims 42-54 depend from Claim 35, incorporating its recitations; therefore, for at least the same reasons described above, Claims 42-54 are at least patentable over *Kingzette* and *Washüttl* combined.

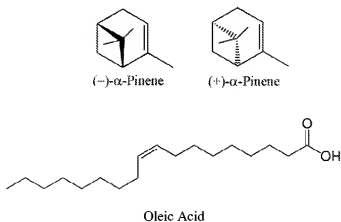
There is no motivation to combine *Kingzette* and *Washüttl*.

Additionally, Applicants respectfully submit that the Office Action would not meet its burden to show a *prima facie* case of obviousness at least because a person having ordinary skill in the art would not have had any motivation to combine *Kingzette* and *Washüttl*. Specifically, the Office Action failed to identify a valid reason that would have prompted a person of ordinary skill in the relevant field of art to combine the cited references.

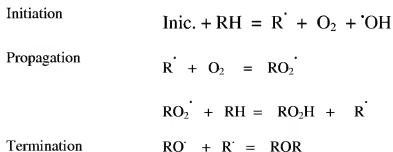
While the methods of both *Kingzette* and *Washüttl* use ozone as one reactant, the reactants being transformed are from entirely different classes of compounds and therefore relate to entirely different fields of art. *Kingzette* discloses a method wherein terpenes or cymenes can be exposed to ozone to produce antiseptics. Specifically, the method preferably uses terpentine, which comprises mostly monoterpene species of  $\alpha$ -pinene and  $\beta$ -pinene. As shown below, pinene is a reactive four membered ring. Conversely, *Washüttl* discloses a method of producing

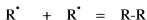
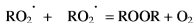
ozonated oils from unsaturated vegetable oils with a preferred embodiment using olive oil. Show below is oleic acid, which is representative of the majority of compounds found in olive oil. Like most oils or fats, oleic acid comprises long hydrocarbon chain and a polar head.

Clearly, the terpenes and oils at issue in *Kingzette* and *Washüttl* represent different classes of compounds exhibiting very different characteristics. Accordingly, one of ordinary skill in the art would not have a motivation to combine *Kingzette* and *Washüttl* because the target molecules in the given reactions would not be considered analogous.



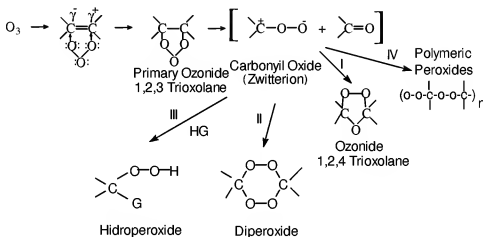
In addition to *Kingzette* and *Washüttl* relating to entirely different classes of target molecules, the reactants and reaction mechanisms of the *Kingzette* and *Washüttl* reactions are also completely different and therefore relate to different classes of reactions. For example, *Kingzette* relates to an oxidation reaction wherein oxygen is bubbled through turpentine. This reaction occurs through a radical mechanism, which is illustrated below.





etc.

In contrast, *Washüttl* relates to an ozonization reaction using ozone as a reactant, which is achieved through a direct molecular mechanism. This mechanism is illustrated below.



Clearly, the oxidation and ozonization reactions in *Kingzette* and *Washüttl* respectively represent different classes of reactions and mechanisms, in addition to relating to different types of reactants. Accordingly, one of ordinary skill in the art would not have a motivation to combine *Kingzette* and *Washüttl* at least because the reactants and reaction mechanisms are not analogous. Moreover, it would not be “obvious to try” the claimed reaction given the compounds and reactions of the prior art being from such disparate classes. *KSR*, 127 S.Ct. at 1741. Therefore, Claims 35-54 are allowable for this reason as well.

### CONCLUSION

Applicant submits that all pending claims are in condition for allowance. Accordingly, early and favorable action allowing all of the pending claims and passing this application to issue is respectfully requested. The Examiner is respectfully requested to contact the undersigned at the telephone number below if there are any remaining questions regarding this application. We believe the appropriate fees accompany this transmission. If, however, insufficient fee payment or fee overpayment occurs, the amount may be withdrawn or deposited from/to Axios Law Group's deposit account. The deposit account number is 50-4051.

Respectfully submitted,  
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